We claim:

1. A light-radiating semiconductor component, comprising:

a semiconductor body emitting electromagnetic radiation during an operation of the semiconductor component, said semiconductor body having a semiconductor layer sequence suitable for emitting electromagnetic radiation of a first wavelength range selected from a spectral region consisting of ultraviolet, blue, and green;

a first electrical terminal and a second electrical terminal each electrically conductively connected to said semiconductor body;

a luminescence conversion element with at least one luminescent material, said luminescence conversion element converting a radiation originating in the first wavelength range into radiation of a second wavelength range different from the first wavelength range, such that the semiconductor component emits polychromatic radiation comprising radiation of the first wavelength range and radiation of the second wavelength range.

2. The semiconductor component according to claim 1, wherein said luminescence conversion element converts radiation of the first wavelength range into radiation of a plurality of second

wavelength ranges from mutually different spectral subregions, such that the semiconductor component emits polychromatic radiation comprising radiation of the first wavelength range and radiation of the plurality of second wavelength ranges.

3. The semiconductor component according to claim 1, wherein the semiconductor component has a defined main radiating direction, and said luminescence conversion element is disposed substantially downstream of said semiconductor body in the main radiating direction of the semiconductor component.

4. The semiconductor component according to claim 1, wherein said luminescence conversion element is at least one luminescence conversion layer disposed in a vicinity of said semiconductor body.

5. The semiconductor component according to claim 1, wherein said luminescence conversion element is a luminescence conversion encapsulation enclosing at least a part of said semiconductor body and partial regions of said first and second electrical terminals.

6. The semiconductor component according to claim 1, wherein said second wavelength range includes wavelengths at least

some of which are longer than wavelengths of the first wavelength range.

7. The semiconductor component according to claim 1, wherein said semiconductor body is adapted to emit ultraviolet radiation during operation of the semiconductor component, and said luminescence conversion element converts at least a portion of the ultraviolet radiation into visible light.

8. The semiconductor component according to claim 1, wherein the first wavelength range and the second wavelength range of the polychromatic radiation lie at least partially in mutually complementary-color spectral regions, and a combination of radiation from the first and second wavelength range results in white light.

9. The semiconductor component according to claim 2, wherein the first wavelength range emitted by said semiconductor body and two second wavelength ranges produce an additive color triad, such that white light is radiated by the semiconductor component during operation thereof.

10. The semiconductor component according to claim 1, wherein the radiation emitted by said semiconductor body has a luminescence intensity maximum in a blue spectral region at a

wavelength selected from the group consisting of λ = 430 nm and λ = 450 nm.

11. The semiconductor component according to claim 1, which further comprises an opaque base housing formed with a recess, and wherein said semiconductor body is disposed in said recess of said base housing, and including a covering layer having a luminescence conversion layer on said recess.

12. The semiconductor component according to claim 1, which further comprises an opaque base housing formed with a recess, and wherein said semiconductor body is disposed in said recess of said base housing, and wherein said recess is at least partially filled with said luminescence conversion element.

13. The semiconductor component according to claim 1, wherein said luminescence conversion element comprises a plurality of layers with mutually different wavelength conversion properties.

14. The semiconductor component according to claim 1, wherein said luminescence conversion element includes organic dye molecules in a plastic matrix.

15. The semiconductor component according to claim 14, wherein said plastic matrix is formed from a plastic material selected from the group consisting of silicone, thermoplastic material, and thermosetting plastic material.

16. The semiconductor component according to claim 14, wherein said luminescence conversion element has organic dye molecules in a matrix selected from the group consisting of an epoxy resin matrix and a polymethyl methacrylate matrix.

17. The semiconductor component according to claim 1, wherein said luminescence conversion element has at least one inorganic luminescence material selected from the phosphor group.

18. The semiconductor component according to claim 17, wherein the inorganic luminescent material is selected from the group of Ce-doped garnets.

19. The semiconductor component according to claim 18, wherein the inorganic luminescent material is YAG:Ce.

20. The semiconductor component according to claim 17, wherein the inorganic luminescent material is embedded in an epoxy resin matrix.

21. The semiconductor component according to claim 17, wherein the inorganic luminescent material is embedded in a matrix formed of inorganic glass with a relatively low melting point.

22. The semiconductor component according to claim 20, wherein the inorganic luminescent material has a mean particle size of approximately 10 µm.

23. The semiconductor component according to claim 1, wherein said luminescence conversion element is provided with a plurality of mutually different materials selected from the group consisting of organic and inorganic luminescent materials.

24. The semiconductor component according to claim 1, wherein said luminescence conversion element includes dye molecules selected from the group consisting of organic and inorganic dye molecules partly with and partly without a wavelength conversion effect.

25. The semiconductor component according to claim 1, wherein said luminescence conversion element includes light-diffusing particles.

26. The semiconductor component according to claim 1, which comprises a transparent encapsulation with light-diffusing particles.

27. The semiconductor component according to claim 1, wherein said luminescence conversion element comprises at least one luminescent 4f-organometallic compound.

28. The semiconductor component according to claim 1, wherein said luminescence conversion element includes a luminescent material that is luminescent in a blue region.

29. The semiconductor component according to claim 1, which comprises a transparent encapsulation with a luminescent material that is luminescent in a blue region.

30. A full-color LED display device, comprising a plurality of the light-radiating semiconductor components of claim 1 arranged in a full-color LED display.

31. In an interior lighting of an aircraft cabin, a plurality of the light-radiating semiconductor components according to claim 1.

32. In combination with a display device, a plurality of the semiconductor components according to claim 1 disposed to illuminate a display of the display device.

33. The combination according to claim 32, wherein said display device includes a liquid crystal display.